DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
OFFICE ENGINEER, MS 43
1727 30TH STREET
P.O. BOX 168041
SACRAMENTO, CA 95816-8041
FAX (916) 227-6214
TTY (916) 227-8454

Flex your power!
Be energy efficient!

**** WARNING ** WARNING ** WARNING ** WARNING ****
This document is intended for informational purposes only.

Users are cautioned that California Department of Transportation (Department) does not assume any liability or responsibility based on these electronic files or for any defective or incomplete copying, exerpting, scanning, faxing or downloading of the contract documents. As always, for the official paper versions of the bidders packages and non-bidder packages, including addenda write to the California Department of Transportation, Plans and Bid Documents, Room 0200, P.O. Box 942874, Sacramento, CA 94272-0001, telephone (916) 654-4490 or fax (916) 654-7028. Office hours are 7:30 a.m. to 4:15 p.m. When ordering bidder or non-bidder packages it is important that you include a telephone number and fax number, P.O. Box and street address so that you can receive addenda.

December 15, 2005

04-SM-1-63.8/64.6
04-1123K4
ER-1187(010)E

Addendum No. 4

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN MATEO COUNTY NEAR PACIFICA ON ROUTE 1 FROM 2.1 KM TO 1.3 KM SOUTH OF LINDA MAR BOULEVARD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on January 18, 2006. The bid opening date was previously postponed indefinitely under Addendum No.3 dated November 3, 2005.

This addendum is being issued to set a new bid opening date as shown herein and revise the Project Plans, the Notice to Contractors and Special Provisions, the Proposal and Contract, and the Federal Minimum Wages with Modification Number 28 dated 12-2-05.

Project Plan Sheets 1, 2, 3, 4, 5, 21, 22, 23, 25, 26, 29, 30, 31, 32, 33, 34, 35, 51, 154 and 174 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 9A, 9B, 9C, 26A, 27A, and 27B are added. Half-sized copies of the added sheets are attached for addition to the project plans.

Project Plan Sheet 13 is deleted.

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," is revised as attached.

In the Special Provisions, Section 5-1.15, "AREAS FOR CONTRACTOR'S USE," is revised as attached.

In the Special Provisions, Section 5-1.18, "PROJECT INFORMATION," is revised as attached.

In the Special Provisions, Section 5-1.21, "ENVIRONMENTALLY SENSITIVE AREAS," is revised as attached.

In the Special Provisions, Section 5-1.22, "ACCESS TO PROJECT SITE," the following paragraph is added after the last paragraph:

"Prospective bidders may make arrangements to visit the project site by contacting the Construction Program Duty Senior, email: duty_senior_district04@dot.ca.gov, telephone number (510) 286-5209."

In the Special Provisions, Section 5-1.23, "RELATIONS WITH CALIFORNIA DEPARTMENT OF FISH AND GAME," is added as attached.

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," is revised as attached.

In the Special Provisions, Section 10-1.02, "WATER POLLUTION CONTROL," is revised as attached.

In the Special Provisions, Section 10-1.03, "BIOLOGICAL MONITOR," is replaced with Section 10-1.03, "BIOLOGICAL MONITORING/ COMPLIANCE WITH SPECIES REGULATIONS," as attached.

In the Special Provisions, Section 10-1.04, "TEMPORARY PERIMETER BARRIER (TYPE FROG)," is deleted.

In the Special Provisions, Section 10-1.13, "TEMPORARY ACCESS," is revised as attached.

In the Special Provisions, Section 10-1.17, "STABILIZED CONSTRUCTION ROADWAY," is deleted.

In the Special Provisions, Section 10-1.19, "COOPERATION," is revised as attached.

In the Special Provisions, Section 10-1.24, "DUST CONTROL," is revised as attached.

In the Special Provisions, Section 10-1.28, "MAINTAINING TRAFFIC," is revised as attached.

In the Special Provisions, Section 10-1.35, "REMOVE TREE," is revised as attached.

In the Special Provisions, Section 10-1.37, "EARTHWORK," is revised as attached.

In the Special Provisions, Section 10-1.38, "STRIPPING EXCAVATION," is deleted.

In the Special Provisions, Section 10-1.395, "EMBANKMENT CONFINEMENT SYSTEM," is added as attached.

In the Special Provisions, Section 10-1.41, "EROSION CONTROL (TYPE B)," is revised as attached.

In the Special Provisions, Section 10-1.455, "IMPORTED TOPSOIL," is added as attached.

In the Special Provisions, Section 10-1.635, "UNDERDRAIN," is added as attached.

In the Special Provisions, Section 10-1.636, "PLASTIC PIPE UNDERDRAIN," is added as attached.

04-SM-1-63.8/64.6
04-1123K4
ER-1187(010)E

In the Special Provisions, Section 10-1.637, "PERMEABLE MATERIAL (CLASS 3)," is added as attached.

In the Special Provisions, Section 10-1.69, "MISCELLANEOUS METAL (TUBE KEY)," is revised as attached.

In the Special Provisions, Section 10-1.74, "TUBULAR BICYCLE RAILING," is added as attached.

In the Proposal and Contract, the Engineer’s Estimate Items 7, 36, 37, 38, 39, 40, 42, 44, 45, 46, 67 and 68 are revised, Items 75, 76, 77, 78, 79, 80, 81, 82, 83 and 84 are added and Items 2, 3, 5, 6, 11, 15 and 74 are deleted as attached.

To Proposal and Contract book holders:

Replace the entire Engineer's Estimate in the Proposal with the attached revised Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work," in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications, and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

The work shall be diligently prosecuted to completion before the expiration of **the NUMBER OF WORKING DAYS BID** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of $20,000.00 per day, for each and every calendar day's delay in finishing the work after expiration of the number of working days bid, if the left and right bridges, including concrete barrier (Type 80M), return walls, retaining walls, approach slabs, joint seal assemblies, and the turnaround structure are not structurally complete for access by the Contractor on Project 04-1123U4, in performance of construction activities associated with the North Portal.

The Contractor shall pay to the State of California the sum of $10,000.00 per day, for each and every calendar day's delay in finishing all remaining work beyond that identified above after expiration of the number of working days bid. In no case will liquidated damages of more than $20,000.00 per day be assessed.

5-1.15 AREAS FOR CONTRACTOR'S USE

Attention is directed to the provisions in Section 7-1.19, "Rights in Land and Improvements," of the Standard Specifications and these special provisions.

Attention is directed to “Environmentally Sensitive Areas” of these special provisions.

The highway right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes, which are not necessary to perform the required work.

Areas available for Contractor’s use are shown on the plans. No area is available within the contract limits for the exclusive use of the Contractor. Use of the Contractor's work areas and other State-owned property shall be at the Contractor's own risk, and the State shall not be held liable for damage to or loss of materials or equipment located within such areas.

The Contractor’s operation(s) shall not disturb or alter existing vegetation, slopes and terrain outside of the areas available for Contractor’s use. The Contractor’s operation(s) and access in the vicinity of any disturbed area shall be suspended until such time the affected vegetation, slopes and terrain are restored.

The Contractor will not be permitted to occupy the Designated Disposal Site, areas within the disposal site, including the future Operations Maintenance Center (OMC), future south portal and haul road and shoulder areas from the Disposal Site to the future South Portal, except to perform contract item activities associated with earthwork. The Contractor will not be permitted to store materials, equipment, vehicles, facilities, stage operations, and or any activities that may limit access or use by the tunnel contractor (04-1123U4) in these areas. Failure to comply with these requirements will result in a deduction of $20,000 per day for any delays to the tunnel contractor’s operations.

The Contractor shall remove equipment, materials, and rubbish from the work areas and other State-owned property which the Contractor occupies. The Contractor shall leave the areas in a presentable condition in conformance with the provisions in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials or for other purposes, if sufficient area is not available to the Contractor within the contract limits, or at the sites designated on the plans outside the contract limits.

5-1.18 PROJECT INFORMATION

The information in this section has been compiled specifically for this project and is made available for bidders and Contractors. Other information referenced in the Standard Specifications and these special provisions do not appear in this section. The information is subject to the conditions and limitations set forth in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," and Section 6-2, "Local Materials," of the Standard Specifications. Bidders and Contractors shall be responsible for knowing the procedures for obtaining information.

Information attached to the project plans is as follows:

Log Of Test Boring

Information available for inspection at the District Office is as follows:

Site Investigation Report Route 1 - Devil's Slide Tunnel Project Pacifica - San Mateo County
Foundation Information Handout
Devil's Slide Bridge, Design Criteria
Portions of the Site Investigation Report
Existing Storm Water Pollution Control Measures Handout

The District Office in which the work is situated is located at 111 Grand Avenue, Oakland, CA 94612. Telephone Number (510) 286-5209; Fax Number (510) 622-1805; E-Mail: DUTY_SENIOR_dISTRICT04@DOT.CA.GOV.

Cross sections are not available for this project

PERMITS AND LICENSES

Attention is directed to Section 7-1.04, "Permits and Licenses," of the Standard Specifications and these special provisions.

The Department has obtained the following permits for this project:

A. U.S. Department of Interior Fish and Wildlife Service (USFWS) Section 7 ESA Consultation December 2000/March 25, 2004
B. California Department of Fish and Game (CDFG)
C. San Mateo County Planning Commission Coastal Development Permit (CDP)
D. California Regional Water Quality Control Board
E. U.S. Army Corps of Engineers(USCOE)

Copies of these permits may be seen at the office of the Construction Program Duty Senior at the District 04 Office, 111 Grand Avenue, Oakland, California 94612; telephone number (510) 286-5209; email: duty_senior_district04@dot.ca.gov.

Full compensation for conforming to the requirements in these permits shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5-1.21 ENVIRONMENTALLY SENSITIVE AREAS

Attention is directed to the designated Environmentally Sensitive Areas (ESAs) shown on the plans. The location of the boundaries of ESAs has been determined by the Engineer and clearly delineated within the project site prior to beginning of work on this project by the placement of perimeter fence (Type ESA), perimeter barriers (Type WM 1.8), and perimeter barriers (Type Frog) as specified in these special provisions. Attention is directed to "Order of Work" and "Clearing and Grubbing" elsewhere in these specifications.

Attention is directed to Section, 7-1.01 "Laws to be Observed," and 7-1.04, "Permits and Licenses," of the Standard Specifications with regards to State and Federal regulations, permits, or agreements which pertain to ESAs.

Vehicle access, storage or transport of materials or equipment, or other project related activities are prohibited within the boundaries of ESAs. Access will be allowed within the boundaries of the ESAs only for approved staff to perform biological monitoring/inspection work, water sampling, collection of native plants and releasing of trapped wildlife. Approved staff shall consist of either representatives of the Engineer or Contractor's personnel approved in advance in writing by the Engineer.

All existing barriers (Type ESA), perimeter barriers (Type WM 1.8), and perimeter barriers (Type Frog) installed within the project site shall remain in place during throughout the duration of the project.

The Contractor shall bear the cost of repair or replacement of existing perimeter barriers (Type ESA), perimeter barriers (Type WM 1.8) and perimeter barriers (Type Frog) that are damaged by his operations in accordance with Section 7-1.11 "Preservation of Property" of the Standard Specifications.

Existing perimeter barriers (Type ESA), perimeter barriers (Type WM 1.8) and perimeter barriers (Type Frog) that requires repair or replacement due to routine maintenance, shall be repaired or replaced when ordered by the Engineer. Repair or replacement of existing perimeter barriers (Type ESA), perimeter barriers (Type WM 1.8) and perimeter barriers (Type Frog) due to routine maintenance performed by the Contractor will be paid for as extra work as provided in Section 4-1.03 "Extra Work" of the Standard Specifications.

All existing perimeter barriers (Type ESA), perimeter barriers (Type WM 1.8), and perimeter barriers (Type Frog) installed within the project site shall remain in place after completion of the project.

The Contractor shall repair, or perform work to mitigate, damage or impacts to ESAs caused by the Contractor's operations, at the Contractor's expense. If the Engineer determines repairs or mitigation work will be performed by others, or if mitigation fees are assessed by the Department, deductions from moneys due to the Contractor will be made for the repair or mitigation costs.

5-1.23 RELATIONS WITH CALIFORNIA DEPARTMENT OF FISH AND GAME

A portion of this project is located within the jurisdiction of the California Department of Fish and Game. An agreement regarding a stream or lake has been entered into by the Department of Transportation and the Department of Fish and Game. The Contractor shall be fully informed of the requirements of this agreement as well as rules, regulations, and conditions that may govern the Contractor's operations in these areas and shall conduct the work accordingly.

Copies of the agreement may be obtained at the Department of Transportation at the following address:

Construction Program Duty Senior
111 Grand Avenue
Oakland, CA 94612

Fax Number: (510) 622-1805
E-mail: DUTY_SENIOR_DISTRICT04@ dot.ca.gov
Tel. Number: (510) 286-5209

It is unlawful for any person to divert, obstruct or change the natural flow of the bed, channel or bank of a stream, river or lake without first notifying the Department of Fish and Game, unless the project or activity is noticed and constructed in conformance with conditions imposed under Fish and Game Code Section 1601.

Attention is directed to Sections 7-1.01, "Laws to be Observed," 7-1.01G, "Water Pollution," and 7-1.12, "Indemnification and Insurance," of the Standard Specifications.

Modifications to the agreement between the Department of Transportation and the Department of Fish and Game which are proposed by the Contractor shall be submitted in writing to the Engineer for transmittal to the Department of Fish and Game for their consideration.

When the Contractor is notified by the Engineer that a modification to the agreement is under consideration, no work shall be performed which is inconsistent with the original agreement or proposed modification until the Departments take action on the proposed modifications. Compensation for delay will be determined in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The provisions of this section shall be made a part of every subcontract executed pursuant to this contract.

Modifications to any agreement between the Department of Transportation and the Department of Fish and Game will be fully binding on the Contractor. The provisions of this section shall be made a part of every subcontract executed pursuant to this contract.

The active stream will be left to maintain its natural course throughout the duration of the project. At no time will the creek be diverted through piping.

A copy of the 1601 Streambed Alteration Agreement must be provided to the Contractor and all subcontractors who work within the stream zone and must be in their possession at the work site.

10-1.01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

Attention is directed to “Project Information” of these special provisions regarding limitations on pier foundation construction and temporary access road construction.

Attention is directed to “Environmentally Sensitive Areas” of these special provisions. The location of the boundaries of ESAs has been determined by the Engineer and has been clearly delineated within the project site prior to beginning of work on this project by the placement of perimeter barriers (Type ESA), perimeter barriers(Type WM 1.8), and perimeter barriers (Type Frog) as specified in these special provisions. Prior to beginning work, the boundaries of Environmentally Sensitive Areas (ESA) shall be clearly delineated in the field.

Attention is directed to "Clearing and Grubbing" and "Roadside Clearing" of these special provisions for removal of vegetation.

Attention is directed to "Cooperation" and "Earthwork" of these special provisions for delivery and placement of excavated material to a dedicated disposal within the vicinity of this project.

Temporary railing (Type K) and temporary crash cushions shall be secured in place prior to commencing work for which the temporary railing and crash cushions are required.

Attention is directed to "Environmentally Sensitive Areas" of these special provisions. Prior to beginning work, the boundaries of the Environmentally Sensitive Areas (ESA) shall be clearly delineated in the field.

Attention is directed to "Water Pollution Control" of these special provisions regarding the submittal and approval of the Storm Water Pollution Prevention Plan prior to performing work having potential to cause water pollution.

Attention is directed to "Maintaining Traffic" of these special provisions and to the traffic handling sheets of the plans.

Attention is directed to "Progress Schedule (Critical Path Method)" of these special provisions regarding the submittal of a general time-scaled logic diagram within 10 days after approval of the contract. The diagram shall be submitted prior to performing any work

At the end of each working day if a difference in excess of 46 mm exists between the elevation of the existing pavement and the elevation of excavations within 1.5 m of the traveled way, material shall be placed and compacted against the vertical cuts adjacent to the traveled way. During excavation operations, native material may be used for this purpose; however, once placing of the structural section commences, structural material shall be used. The material shall be placed to the level of the elevation of the top of existing pavement and tapered at a slope of 1:4 (vertical:horizontal) or flatter to the bottom of the excavation. Full compensation for placing the material on a 1:4 slope, regardless of the number of times the material is required, and subsequent removing or reshaping of the material to the lines and grades shown on the plans shall be considered as included in the contract price paid for the materials involved and no additional compensation will be allowed therefor.Within 15 days after the contract has been approved the Contractor shall furnish the Engineer a statement from the vendor that the order for the seed required for this contract has been received and accepted by the vendor. The statement from the vendor shall include the names and quantity of seed ordered and the anticipated date of delivery.

Attention is directed to "Quality Control Seed Testing" of these special provisions regarding testing of seed for erosion control and furnishing test results to the Engineer.

Attention is directed to "Fiber Rolls" of these special provisions regarding the installation of fiber rolls prior to the start of Erosion Control (Type D) work.

Attention is directed to "Erosion Control (Netting)" of these special provisions regarding the installation of erosion control (netting) prior to the application of Erosion Control (Type D) materials.

Attention is directed to Erosion Control (Type B)" of these special provisions regarding the installation of erosion control (netting), wire mesh , anchors and restraints prior to the application of Erosion Control (Type D) materials.

10-1.02 WATER POLLUTION CONTROL

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these special provisions.

This project lies within the boundaries of the Region 2 Regional Water Quality Control Board (RWQCB).

The State Water Resources Control Board (SWRCB) has issued a permit to the Department which governs storm water and non-storm water discharges from its properties, facilities and activities. The Department's Permit is entitled: "Order No. 99-06-DWQ, NPDES No. CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation Properties, Facilities, and Activities." Copies of the Department's Permit are available for review from the SWRCB, Storm Water Permit Unit, 1001 "I" Street, P.O. Box 1977, Sacramento, California 95812-1977, Telephone: (916) 341-5254, and may also be obtained from the SWRCB Internet website at: http://www.swrcb.ca.gov/stormwtr/caltrans.html.

The Department's Permit references and incorporates by reference the current Statewide General Permit issued by the SWRCB entitled "Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Construction Activity," which regulates discharges of storm water and non-storm water from construction activities disturbing 0.4-hectare or more of soil in a common plan of development. Sampling and analysis requirements as specified in SWRCB Resolution No. 2001-46 are added to the Statewide General Permit. Copies of the Statewide General Permit and modifications thereto are available for review from the SWRCB, Storm Water Permit Unit, 1001 "I" Street, P.O. Box 1977, Sacramento, California 95812-1977, Telephone: (916) 341-5254 and may also be obtained from the SWRCB Internet website at: http://www.swrcb.ca.gov/stormwtr/construction.html.

The NPDES permits that regulate this project, as referenced above, are hereafter collectively referred to as the "Permits."

This project shall conform to the Permits and modifications thereto. The Contractor shall maintain copies of the Permits at the project site and shall make the Permits available during construction.

The Permits require the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared in conformance with the requirements of the Permits, the Department's "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual," and the Department's "Construction Site Best Management Practices (BMPs) Manual," including addenda to those permits and manuals issued up to and including the date of advertisement of the project. These manuals are hereinafter referred to, respectively, as the "Preparation Manual" and the "Construction Site BMPs Manual," and collectively, as the "Manuals." Copies of the Manuals may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815, Telephone: (916) 445-3520, and may also be obtained from the Department's Internet website at:

http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm.

The Contractor shall know and fully comply with applicable provisions of the Permits and all modifications thereto, the Manuals, and Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from both the project site and areas of disturbance outside the project limits during construction. Attention is directed to Sections 7-1.01, "Laws to be Observed," and 7-1.12, "Indemnification and Insurance," of the Standard Specifications.

The Permits shall apply to storm water and certain permitted non-storm water discharges from areas outside the project site which are directly related to construction activities for this contract including, but not limited to, asphalt batch plants, material borrow areas, concrete plants, staging areas, storage yards and access roads. The Contractor shall comply with the Permits and the Manuals for those areas and shall implement, inspect and maintain the required water pollution control practices. The Engineer shall be allowed full access to these areas during construction to assure Contractor's proper implementation of water pollution control practices. Installing, inspecting and maintaining water pollution control practices on areas outside the highway right of way not specifically arranged and provided for by the Department for the execution of this contract, will not be paid for.

The Contractor shall be responsible for penalties assessed or levied on the Contractor or the Department as a result of the Contractor's failure to comply with the provisions in this section "Water Pollution Control" including, but not limited to, compliance with the applicable provisions of the Permits, the Manuals, and Federal, State and local regulations and requirements as set forth therein.

Penalties as used in this section, "Water Pollution Control," shall include fines, penalties and damages, whether proposed, assessed, or levied against the Department or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred in settlement for alleged violations of the Permits, the Manuals, or applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, in mitigation or to remediate or correct violations.

RETENTION OF FUNDS

Notwithstanding any other remedies authorized by law, the Department may retain money due the Contractor under the contract, in an amount determined by the Department, up to and including the entire amount of Penalties proposed, assessed, or levied as a result of the Contractor's violation of the Permits, the Manuals, or Federal or State law, regulations or requirements. Funds may be retained by the Department until final disposition has been made as to the Penalties. The Contractor shall remain liable for the full amount of Penalties until such time as they are finally resolved with the entity seeking the Penalties.

Retention of funds for failure to conform to the provisions in this section, "Water Pollution Control," shall be in addition to the other retention amounts required by the contract. The amounts retained for the Contractor's failure to conform to provisions in this section will be released for payment on the next monthly estimate for partial payment following the date when an approved SWPPP has been implemented and maintained, and when water pollution has been adequately controlled, as determined by the Engineer.

When a regulatory agency identifies a failure to comply with the Permits and modifications thereto, the Manuals, or other Federal, State or local requirements, the Department may retain money due the Contractor, subject to the following:

A. The Department will give the Contractor 30 days notice of the Department's intention to retain funds from partial payments which may become due to the Contractor prior to acceptance of the contract. Retention of funds from payments made after acceptance of the contract may be made without prior notice to the Contractor.

B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications.

C. If the Department has retained funds, and it is subsequently determined that the State is not subject to the entire amount of the Costs and Liabilities assessed or proposed in connection with the matter for which the retention was made, the Department shall be liable for interest on the amount retained for the period of the retention. The interest rate payable shall be 6 percent per annum.

During the first estimate period that the Contractor fails to conform to the provisions in this section, "Water Pollution Control," the Department may retain an amount equal to 25 percent of the estimated value of the contract work performed.

The Contractor shall notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor and the Department shall provide copies of correspondence, notices of violation, enforcement actions or proposed fines by regulatory agencies to the requesting regulatory agency.

STORM WATER POLLUTION PREVENTION PLAN PREPARATION, APPROVAL AND AMENDMENTS

As part of the water pollution control work, a Storm Water Pollution Prevention Plan (SWPPP) is required for this contract. The SWPPP shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, the requirements in the Manuals, the requirements of the Permits, and these special provisions. Upon the Engineer's approval of the SWPPP, the SWPPP shall be considered to fulfill the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications for development and submittal of a Water Pollution Control Program.

No work having potential to cause water pollution, shall be performed until the SWPPP has been approved by the Engineer. Approval shall not constitute a finding that the SWPPP complies with applicable requirements of the Permits, the Manuals and applicable Federal, State and local laws, regulations, and requirements.

Existing storm water pollution control measures have been installed by the Department within the project work site for the purpose of installing various types of perimeters barriers and to delineate the exact location of the boundaries of the ESAs in the field. The removal of vegetation within the project limit was done to minimize impacts to wildlife. Existing storm water pollution control measures were not developed nor intended as the water pollution control measures for this contract. Attention is directed to Section 2-1.03 "Examination of Plans, Specifications, Contract, and Site of Work" of the Standard Specifications.

The Contractor shall designate a Water Pollution Control Manager. The Water Pollution Control Manager shall be responsible for the preparation of the SWPPP and required modifications or amendments, and shall be responsible for the implementation and adequate functioning of the various water pollution control practices employed. The Contractor may designate different Water Pollution Control Managers to prepare the SWPPP and to implement the water pollution control practices. The Water Pollution Control Managers shall serve as the primary contact for issues related to the SWPPP or its implementation. The Contractor shall submit to the Engineer a statement of qualifications, describing the training, previous work history and expertise of the individual selected by the Contractor to serve as Water Pollution Control Manager. The Water Pollution Control Manager shall have a minimum of 24 hours of formal storm water management training or certification as a Certified Professional in Erosion and Sediment Control (CPESC). The Engineer will reject the Contractor's submission of a Water Pollution Control Manager if the submitted qualifications are deemed to be inadequate.

The SWPPP shall apply to the areas within and those outside of the highway right of way that are directly related to construction operations including, but not limited to, asphalt batch plants, material borrow areas, concrete plants, staging areas, storage yards, and access roads.

The SWPPP shall incorporate water pollution control practices in the following categories:

A. Soil stabilization.
B. Sediment control.
C. Wind erosion control.
D. Tracking control.
E. Non-storm water management.
F. Waste management and materials pollution control.

The following contract items of work shall be incorporated into the SWPPP as "Temporary Water Pollution Control Practices ":Temporary Concrete Washout Facility, Temporary Construction Entrance, Stabilized Construction Roadway, Temporary Silt Fence, Temporary Perimeter Barrier(WH 1.8), Temporary Hydraulic Mulch (Bonded Fiber Matrix), Temporary Check Dam, Construction Site Dewatering and, Non Storm Water Discharges Control, and Temporary Cover. The Contractor's attention is directed to the special provisions provided for Temporary Water Pollution Control Practices.

The following contract items of work, as shown on the project plans or as specified elsewhere in these special provisions, shall be identified in the SWPPP as permanent water pollution control practices: : Fiber Rolls, Erosion Control (Type B), Erosion Control (Type D), and Erosion Control (Netting). These permanent water pollution control practices shall be constructed, and utilized during the construction period. The Contractor shall maintain and protect the permanent water pollution control practices throughout the duration of the project and shall restore these controls to the lines, grades and condition shown on the plans prior to acceptance of the contract.

The SWPPP shall include, but not be limited to, the items described in the Manuals, Permits and related information contained in the contract documents. The SWPPP shall also include a copy of the following:

1. Notice Of Construction
2. Waste Discharge Requirement and Water Quality 401 Certification from the California Regional Water Quality Control Board
3. United States Army Corps Of Engineers (404) Permit
4. California Department of Fish & Game 1602 Lake and Streambed Alteration Agreement
5. San Mateo County Development permit

The Contractor shall develop and include in the SWPPP the Sampling and Analysis Plan(s) as required by the Permits, and modifications thereto, and as required in "Sampling and Analytical Requirements" of this section.

The Contractor shall develop a Water Pollution Control Schedule that describes the timing of grading or other work activities that could affect water pollution. The Water Pollution Control Schedule shall be updated by the Contractor to reflect changes in the Contractor's operations that would affect the necessary implementation of water pollution control practices.

The Contractor shall complete the "Construction Site BMPs Consideration Checklist" presented in the Preparation Manual and shall incorporate water pollution control practices into the SWPPP. Water pollution control practices include the "Minimum Requirements" and other Contractor-selected water pollution control practices from the "Construction Site BMPs Consideration Checklist" and the "Project-Specific Minimum Requirements" identified in the Water Pollution Control Cost Break-Down of this section.

Within 20 working days after the approval of the contract, the Contractor shall submit 3 copies of the draft SWPPP to the Engineer. The Engineer will have 10 working days to review the SWPPP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the SWPPP, 4 approved copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Attention is directed to "Project Information" of these special provisions regarding existing water pollution control measures within the project site. The contractor's draft SWPPP shall include all proposed changes and or modifications to existing water pollution control measures.

The Contractor shall prepare an amendment to the SWPPP when there is a change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, municipal storm drain systems, or when the Contractor's activities or operations violate a condition of the Permits, or when directed by the Engineer. Amendments shall identify additional water pollution control practices or revised operations, including those areas or operations not identified in the initially approved SWPPP. Amendments to the SWPPP shall be prepared and submitted for review and approval within a time approved by the Engineer, but in no case longer than the time specified for the initial submittal and review of the SWPPP. At a minimum, the SWPPP shall be amended annually and submitted to the Engineer 25 days prior to the defined rainy season.

The Contractor shall keep one copy of the approved SWPPP and approved amendments at the project site. The SWPPP shall be made available upon request by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests by the public shall be directed to the Engineer.

COST BREAK-DOWN

The Contractor shall include a Water Pollution Control Cost Break-Down in the SWPPP which itemizes the contract lump sum for water pollution control work. The Contractor shall use the Water Pollution Control Cost Break-Down provided in this section as the basis for the cost break-down submitted with the SWPPP. The Contractor shall use the Water Pollution Control Cost Break-Down to identify items, quantities and values for water pollution control work, excluding Temporary Water Pollution Control Practices for which there are separate bid items. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-down submitted with the SWPPP. Partial payment for the item of water pollution control will not be made until the Water Pollution Control Cost Break-Down is approved by the Engineer.

Attention is directed to "Time-Related Overhead" of these special provisions regarding compensation for time-related overhead.

Line items indicated in the Water Pollution Control Cost Break-Down in this section with a specified Estimated Quantity shall be considered "Project-Specific Minimum Requirements." The Contractor shall incorporate Project-Specific Minimum Requirements with Contractor-designated quantities and values into the Water Pollution Control Cost Break-Down submitted with the SWPPP.

Line items indicated in the Water Pollution Control Cost Break-Down in this section without a specified Estimated Quantity shall be considered by the Contractor for selection to meet the applicable "Minimum Requirements" as defined in the Manuals, or for other water pollution control work as identified in the "Construction Site BMPs Consideration Checklist" presented in the Preparation Manual. In the Water Pollution Control Cost Break-Down submitted with the SWPPP, the Contractor shall list only those water pollution control practices selected for the project, including quantities and values required to complete the work for those items.

The sum of the amounts for the items of work listed in the Water Pollution Control Cost Break-Down shall be equal to the contract lump sum price bid for water pollution control. Overhead and profit, except for time-related overhead, shall be included in the individual items listed in the cost break-down.

ITEM	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	VALUE	AMOUNT
SS-11	Slope Drains	EA	3		
SC-2	Sediment/Desilting Basin	EA	2		
SC-3	Sediment Trap	EA	3		
SC-6	Gravel Bag Berm	M	120		
SC-7	Street Sweeping and Vacuuming	LS			
SC-9	Straw Bale Barrier	M	45		
WE-1	Wind Erosion Control	LS			
NS-1	Water Conservation Practices	LS			
NS-8	Vehicle and Equipment Cleaning	LS			
NS-9	Vehicle and Equipment Fueling	LS			
NS-10	Vehicle and Equipment Maintenance	LS			
WM-1	Material Delivery and Storage	LS			
WM-2	Material Use	LS			
WM-3	Stockpile Management	LS			
WM-4	Spill Prevention and Control	LS			
WM-5	Solid Waste Management	LS			
WM-6	Hazardous Waste Management	LS			
WM-8	Concrete Waste Management	LS			
WM-9	Sanitary/Septic Waste Management	LS			
WM-10	Liquid Waste Management	LS			

TOTAL _____

Adjustments in the items of work and quantities listed in the approved cost break-down shall be made when required to address amendments to the SWPPP, except when the adjusted items are paid for as extra work.

No adjustment in compensation will be made to the contract lump sum price paid for water pollution control due to differences between the quantities shown in the approved cost break-down and the quantities required to complete the work as shown on the approved SWPPP. No adjustment in compensation will be made for ordered changes to correct SWPPP work resulting from the Contractor's own operations or from the Contractor's negligence.

The approved cost break-down will be used to determine partial payments during the progress of the work and as the basis for calculating the adjustment in compensation for the item of water pollution control due to increases or decreases of quantities ordered by the Engineer. When an ordered change increases or decreases the quantities of an approved cost break-down item, the adjustment in compensation will be determined in the same manner specified for increases and decreases in the quantity of a contract item of work in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications. If an ordered change requires a new item which is not on the approved cost break-down, the adjustment in compensation will be determined in the same manner specified for extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

If requested by the Contractor and approved by the Engineer, changes to the water pollution control practices listed in the approved cost break-down, including addition of new water pollution control practices, will be allowed. Changes shall be included in the approved amendment of the SWPPP. If the requested changes result in a net cost increase to the lump sum price for water pollution control, an adjustment in compensation will be made without change to the water pollution control item. The net cost increase to the water pollution control item will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

SWPPP IMPLEMENTATION

Unless otherwise specified, upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, removing, and disposing of the water pollution control practices specified in the SWPPP and in the amendments. The Contractor shall also be responsible throughout the duration of the project for maintaining existing water pollution control measures found within the project site. Existing water pollution control measures found within the project site may be modified by the Contractor's approved SWPPP. Unless otherwise directed by the Engineer, the Contractor's responsibility for SWPPP implementation shall continue throughout temporary suspensions of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. Requirements for installation, construction, inspection, maintenance, removal, and disposal of water pollution control practices shall conform to the requirements in the Manuals and these special provisions.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the Contractor and approved by the Engineer in writing, but shall be corrected prior to the onset of precipitation. If the Contractor fails to correct the identified deficiency by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance with this section, "Water Pollution Control." Attention is directed to Section 5-1.01, "Authority of Engineer," of the Standard Specifications, and to "Retention of Funds" of this section for possible nonconformance penalties.

If the Contractor fails to conform to the provisions of this section, "Water Pollution Control," the Engineer may order the suspension of construction operations until the project complies with the requirements of this section.

Implementation of water pollution control practices may vary by season. The Construction Site BMPs Manual and these special provisions shall be followed for control practice selection of year-round, rainy season and non-rainy season water pollution control practices.

Year-Round Implementation Requirements

The Contractor shall have a year-round program for implementing, inspecting and maintaining water pollution control practices for wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control.

The National Weather Service weather forecast shall be monitored and used by the Contractor on a daily basis. An alternative weather forecast proposed by the Contractor may be used if approved by the Engineer. If precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation.

Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur or will occur during the ensuing 21 days. Non-active areas shall be protected as prescribed in the Construction Site BMPs Manual within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

In order to provide effective erosion control, the Contractor may be directed by the Engineer to apply permanent erosion control in small or multiple units. The Contractor's attention is directed to "Erosion Control (Type B)", "Erosion Control (Type D)", Erosion Control (Netting) and "Move-In/Move-Out (Erosion Control)" of these special provisions.

The Contractor shall implement, maintain and inspect the following temporary sediment control practices on a year-round basis. The listed practices shall remain in place until their use is no longer needed, as determined by the Engineer.

YEAR-ROUND SEDIMENT CONTROL PRACTICES	LOCATION USED
Silt fence	Perimeter of earthwork operations
Temporary sediment traps	Runoff collection points
Temporary Construction entrance	At the entrance to work and staging areas
Sediment/Desikting Basin	Runoff Collection Points

The Contractor shall implement, maintain and inspect the following Waste Management and Materials Pollution Control and Non-Storm Water best management practices. The listed practices shall include protective covers on a year-round basis and shall remain in place until their use is no longer needed, as determined by the Engineer.

YEAR-ROUND Waste Management and Materials Pollution control and Non-Storm Water practices	REQUIREMENT
Vehicle and Equipment Cleaning areas	Overhead cover and side wind protection
Vehicle and Equipment Fueling areas	Overhead cover and side wind protection
Vehicle and Equipment Maintenance areas	Overhead cover and side wind protection
Material Delivery and Storage areas	Overhead cover and side wind protection

Soil stabilization and sediment control practices shall be provided throughout the rainy season, defined as between October 15 and April 15.

An implementation schedule of required soil stabilization and sediment control practices for disturbed soil areas shall be completed no later than 20 days prior to the beginning of each rainy season. The implementation schedule shall identify the soil stabilization and sediment control practices and the dates when the implementation will be 25 percent, 50 percent and 100 percent complete, respectively. For construction activities beginning during the rainy season, the Contractor shall implement applicable soil stabilization and sediment control practices. The Contractor shall implement soil stabilization and sediment control practices a minimum of 20 days prior to the start of the rainy season.

Throughout the defined rainy season, the active disturbed soil area of the project site shall be not more than 0.6 hectares and not more than 0.12 hectares above the tunnel portals. The Engineer may approve, on a case-by-case basis, expansions of the active disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site sufficient to protect disturbed soil areas. A detailed plan for the mobilization of sufficient labor and equipment shall be maintained to deploy the water pollution control practices required to protect disturbed soil areas prior to the onset of precipitation.

Non-Rainy Season Implementation Requirements

The non-rainy season shall be defined as days outside the defined rainy season. The Contractor's attention is directed to the Construction Site BMPs Manual for soil stabilization and sediment control implementation requirements on disturbed soil areas during the non-rainy season. Disturbed soil areas within the project shall be protected in conformance with the requirements in the Construction Site BMPs Manual with an effective combination of soil stabilization and sediment control.

MAINTENANCE

To ensure the proper implementation and functioning of water pollution control practices, the Contractor shall regularly inspect and maintain the construction site for the water pollution control practices identified in the SWPPP. The construction site shall be inspected by the Contractor as follows:

A. Prior to a forecast storm.
B. After a precipitation event which causes site runoff.
C. At 24 hour intervals during extended precipitation events.
D. Routinely, a minimum of once every two weeks outside of the defined rainy season.
E. Routinely, a minimum of once every week during the defined rainy season.

The Contractor shall use the Storm Water Quality Construction Site Inspection Checklist provided in the Preparation Manual or an alternative inspection checklist provided by the Engineer. One copy of each site inspection record shall be submitted to the Engineer within 24 hours of completing the inspection.

REPORTING REQUIREMENTS

Report of Discharges, Notices or Orders

If the Contractor identifies discharges into surface waters or drainage systems in a manner causing, or potentially causing, a condition of pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge event, notice or order. The report shall include the following information:

A. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
B. The water pollution control practices deployed before the discharge event, or prior to receiving the notice or order.
C. The date of deployment and type of water pollution control practices deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent reoccurrence.
D. An implementation and maintenance schedule for affected water pollution control practices.

Report of First-Time Non-Storm Water Discharge

The Contractor shall notify the Engineer at least 3 days in advance of first-time non-storm water discharge events, excluding exempted discharges. The Contractor shall notify the Engineer of the operations causing non-storm water discharges and shall obtain field approval for first-time non-storm water discharges. Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

Annual Certifications

By June 15 of each year, the Contractor shall complete and submit an Annual Certification of Compliance, as contained in the Preparation Manual, to the Engineer.

SAMPLING AND ANALYTICAL REQUIREMENTS

The Contractor is required to implement specific sampling and analytical procedures to determine whether BMPs implemented on the construction site are:

A. preventing pollutants that are known or should be known by permittees to occur on construction sites that are not visually detectable in storm water discharges, to cause or contribute to exceedances of water quality objectives.

Non-Visible Pollutants

The project has the potential to discharge non-visible pollutants in storm water from the construction site. The project SWPPP shall contain a Sampling and Analysis Plan (SAP) that describes the sampling and analysis strategy and schedule to be implemented on the project for monitoring non-visible pollutants in conformance with this section.

The SAP shall identify potential non-visible pollutants that are known or should be known to occur on the construction site associated with the following: (1) construction materials, wastes or operations; (2) known existing contamination due to historical site usage; or (3) application of soil amendments, including soil stabilization products, with the potential to alter pH or contribute toxic pollutants to storm water. Planned material and waste storage areas, locations of known existing contamination, and areas planned for application of soil amendments shall be shown on the SWPPP Water Pollution Control Drawings.

The SAP shall identify a sampling schedule for collecting a sample down gradient from the applicable non-visible pollutant source and a sufficiently large uncontaminated control sample during the first two hours of discharge from rain events during daylight hours which result in a sufficient discharge for sample collection. If run-on occurs onto the non-visible pollutant source, a run-on sample that is immediately down gradient of the run-on to the Department's right of way shall be collected. A minimum of 72 hours of dry weather shall occur between rain events to distinguish separate rain events.

The SAP shall state that water quality sampling will be triggered when any of the following conditions are observed during the required storm water inspections conducted before or during a rain event:

A. Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions.

B. Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

C. Construction activities, such as application of fertilizer, pesticide, herbicide, methyl methacrylate concrete sealant, or non-pigmented curing compound have occurred during a rain event or within 24 hours preceding a rain event, and there is the potential for discharge of pollutants to surface waters or drainage system.

D. Soil amendments, including soil stabilization products, with the potential to alter pH levels or contribute toxic pollutants to storm water runoff have been applied, and there is the potential for discharge of pollutants to surface waters or drainage system (unless independent test data are available that demonstrate acceptable concentration levels of non-visible pollutants in the soil amendment).

E. Storm water runoff from an area contaminated by historical usage of the site is observed to combine with storm water, and there is the potential for discharge of pollutants to surface waters or drainage system.

The SAP shall identify sampling locations for collecting down gradient and control samples, and the rationale for their selection. The control sampling location shall be selected where the sample does not come into contact with materials, wastes or areas associated with potential non-visible pollutants or disturbed soil areas. Sampling locations shall be shown on the SWPPP Water Pollution Control Drawings. Only trained personnel shall collect water quality samples and be identified in the SAP. Qualifications of designated sampling personnel shall describe training and experience, and shall be included in the SWPPP. The SAP shall state monitoring preparation, sample collection procedures, quality assurance/quality control, sample labeling procedures, sample collection documentation, sample shipping and chain of custody procedures, sample numbering system, and reference the construction site health and safety plan.

The SAP shall identify the analytical method to be used for analyzing down gradient and control samples for potential non-visible pollutants on the project. For samples analyzed in the field by sampling personnel, collection, analysis, and equipment calibration shall be in conformance with the Manufacturer's specifications. For samples that will be analyzed by a laboratory, sampling, preservation, and analysis shall be performed by a State-certified laboratory in conformance with 40 CFR 136. The SAP shall identify the specific State-certified laboratory, sample containers, preservation requirements, holding times, and analysis method to be used. A list of State-certified laboratories that are approved by the Department is available at the following internet site: http://www.dhs.ca.gov/ps/ls/elap/html/lablist_county.htm.

Analytical Results and Evaluation

The Contractor shall submit a hard copy and electronic copy of water quality analytical results and quality assurance/quality control data to the Engineer within 5 days of sampling for field analyses and within 30 days for laboratory analyses. Analytical results shall be accompanied by an evaluation from the Contractor to determine if down gradient samples show elevated levels of the tested parameter relative to levels in the control sample. If down gradient or downstream samples, as applicable, show increased levels, the Contractor will assess the BMPs, site conditions, and surrounding influences to determine the probable cause for the increase. As determined by the assessment, the Contractor will repair or modify BMPs to address increases and amend the SWPPP as necessary. Electronic results (in one of the following file formats: .xls, .txt, .csv, .dbs, or .mdb) shall have at a minimum the following information: sample identification number, contract number, constituent, reported value, method reference, method detection limit, and reported detection limit. The Contractor shall document sample collection during rain events.

Water quality sampling documentation and analytical results shall be maintained with the SWPPP on the project site until a Notice of Completion has been submitted and approved.

If construction activities or knowledge of site conditions change, such that discharges or sampling locations change, the Contractor shall amend the SAP in conformance with this section, "Water Pollution Control."

PAYMENT

The contract lump sum price paid for prepare storm water pollution prevention plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising, and amending the SWPPP, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Attention is directed to Section 9-1.06, "Partial Payments," and Section 9-1.07, "Payment After Acceptance," of the Standard Specifications. Payments for prepare storm water pollution prevention plan will be made as follows:

A. After the SWPPP has been approved by the Engineer, 75 percent of the contract item price for prepare storm water pollution prevention plan will be included in the monthly partial payment estimate.

B. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining 25 percent of the contract item price for prepare storm water pollution prevention plan will be made in conformance with the provisions in Section 9-1.07.

The contract lump sum price paid for water pollution control shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing, constructing, removing, and disposing of water pollution control practices, including non-storm water management, and waste management and materials pollution water pollution control practices, except those for which there is a contract item of work as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Storm water sampling and analysis will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. No payment will be made for the preparation, collection, analysis, and reporting of storm water samples required where appropriate BMPs are not implemented prior to a rain event, or if a failure of a BMP is not corrected prior to a rain event.

For items identified on the approved Water Pollution Control Cost Break-Down and for existing water pollution control measures found within the project site, the cost of maintaining the temporary water pollution control practices shall be divided equally by the State and the Contractor as follows:

Soil Stabilization
Temporary water pollution control practices except:
SS-1 Scheduling
SS-2 Preservation of Existing Vegetation

Sediment Control
Temporary water pollution control practices except:
SC-7 Street Sweeping and Vacuuming

Wind Erosion Control
No sharing of maintenance costs will be allowed.

Tracking Control
TC-1 Stabilized Construction Entrance/Exit.

Non-Storm Water Management
No sharing of maintenance costs will be allowed.

Waste Management & Materials Pollution Control
No sharing of maintenance costs will be allowed.

The division of cost will be made by determining the cost of maintaining water pollution control practices in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications and paying to the Contractor one-half of that cost. Cleanup, repair, removal, disposal, improper installation, and replacement of water pollution control practices damaged by the Contractor's negligence, shall not be considered as included in the cost for performing maintenance.

The provisions for sharing maintenance costs shall not relieve the Contractor from the responsibility for providing appropriate maintenance on items with no shared maintenance costs.

Full compensation for non-shared maintenance costs of water pollution control practices, as specified in this section, "Water Pollution Control," shall be considered as included in the contract lump sum price paid for water pollution control and no additional compensation will be allowed therefor.

Water pollution control practices for which there is a contract item of work, will be measured and paid for as that contract item of work.

10-1.03 BIOLOGICAL MONITORING/ COMPLIANCE WITH SPECIES REGULATIONS

Attention is directed to "Permits and Licenses," "Environmentally Sensitive Areas," "Order Of Work", General Migratory Bird Protection, and "Roadside Clearing," elsewhere in these special provisions.

The Contractor shall ensure protection of wildlife and plant species of concern during construction. The State and Federal Endangered Species Acts protect listed plant and wildlife species, and also designated Species Of Concern. The federal Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), title 50 Code of Federal Regulations parts 10, 13 and 21, and California Department of Fish & Game Code Sections 3503, 3513, and 3800 protect migratory birds, their occupied nests and eggs from disturbance or destruction. A formal Memorandum of Understanding between the Department and the Department of Fish & Game has been prepared in regard to project construction mitigation measures required for the San Francisco dusky-footed woodrat.

The Engineer will provide Biological Monitor(s) on this project that are required to monitor for the presence of listed plant and wildlife species, general wildlife, woodrat nests, and bird nests. A population of California red-legged frog (CRLF), a listed species, is found at Shamrock Ranch. Since suitable habitat for San Francisco garter snake (SFGS) exists on the site at Shamrock Ranch, the Biological Monitor will also concentrate on this species; however, the SFGS has not been found at the site to date.

All Contractor employees working on the project, including subcontractors, shall attend a one-hour pre-construction Employee Biology Education Program presented by the Biological Monitor. Contractor field workers will not be permitted to start field work on the project until they have attended a pre-construction Employee Biology Education Program. The Contractor shall notify the Engineer 10 working days prior to the start of any construction to schedule this training. The employee education program will include descriptions of the California red-legged frog, San Francisco garter snake, woodrat nests, and bird nests, as well as include information regarding the duties of the Biological Monitor and compliance with California Department of Fish and Game and U.S. Fish and Wildlife requirements.

Nesting or attempted nesting by woodrats is anticipated to occur between, but not limited to, January 1st to July 31st. During the woodrat nesting season, woodrats normally attempt to nest on the ground in dense vegetation. The Contractor shall maintain the project site so that vegetated ground cover shall not exceed 100mm in height above the ground surface in order to prevent woodrats, and other wildlife from nesting on the site. If woodrat nests are found within the project site resulting from the Contractor's failure to maintain an on-going clearing of the vegetated cover, then any delays, including stoppage of work activities, required mitigation measures and consultation with the Department of Fish and Game will be at the Contractor's expense. The Contractor shall also reimburse the State for costs related to additional Biological Monitoring activities. Mitigation measures may include the partial dismantling of the woodrat nests until the mother moves the young and the establishment of buffer zones where construction shall be prohibited until the young are moved from the nest by the mother. The Biological Monitor is the only person who will be permitted to dismantle woodrat nests.

In addition, after construction starts, if a lapse in project work activities of 3 days or more occurs during the woodrat nesting season, then the Biological Monitor will have to conduct a survey of the site for possible newly built and/or rebuilt woodrat nests (which could have been built during the lapse in project work of 3 days or more) before construction activities are allowed to continue. After the lapse, the Contractor will not begin construction activities again until the Engineer grants approval.

The Contractor shall notify the Engineer 5 working days prior to starting any construction activities and shall provide the Engineer with a work schedule that identifies the types of construction activities that will occur, their location on the project site, number and type of construction vehicles used, and location of where vehicles will be utilized, and work shift hours. Once construction has started, this schedule shall be provided on a weekly basis to the Engineer.

The Contractor shall allow safe access within the construction area for the Biological Monitor(s) to conduct monitoring activities at all times. Biological Monitors will conduct monitoring activities one hour prior to the start of construction activities and throughout the duration of the work shift(s).

If wildlife or nests are encountered on the project site, construction activities in the surrounding area shall be halted immediately. The Engineer and the Biological Monitor shall be notified immediately, and construction activities shall stop until the Engineer provides written notification to continue work.

Only Biological Monitors are allowed to handle wildlife.

Full compensation for any delays or stoppage of work to the Contractor's operations resulting from compliance with Biological Monitoring activities up to 50 hours, regardless of the number of occurrences, including inefficiencies and loss of productivity, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor. Delays or stoppage of work resulting from the Contractor's failure to comply with these special provisions will be the responsibility of the Contractor and will not be considered as part of the 50 hours as referenced above.

If, in the opinion of the Engineer, completion of the work is delayed or stoppage of work resulting from compliance with Biological Monitoring is beyond the 50 hours as previously specified, the State will compensate the Contractor for such delays to the extent provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Full compensation for maintaining 100 mm maximum height of vegetated cover from the ground surface shall be considered included in the various contract items of work and no additional compensation will be allowed therefor.

Full compensation for conforming to "Biological Monitoring/Compliance with Species Regulations" of the Special Provisions shall be considered included in the various contract items of work and no additional compensation will be allowed therefor.

10-1.13 TEMPORARY ACCESS

At the option of the Contractor, areas available for Contractor's use as shown on the plans may be developed to facilitate the movement of large equipment and machinery. If the Contractor elects to develop temporary access, all work shall be within the areas available for Contractor's use as shown on the plans.

The Department has pioneered temporary access roads only for the purpose of installing various types of perimeter barriers to delineate the location of the boundaries of the ESAs in the field and for the purpose of removing vegetation when impacts to wildlife are minimal. Existing pioneered temporary access roads are not compacted. Existing pioneered temporary access was not developed nor intended to support movement of large equipment and machinery for use by the contractor on this contract. Attention is directed to Section 2-1.03 "Examination of Plans, Specification, Contract, and Site of Work," of the Standard Specifications.

TEMPORARY ACCESS PLANS

The Contractor shall submit to the Engineer, as provided in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, a plan that details the work involved in developing access through the defined corridor. At a minimum, the plan shall show all grading, drainage, surfacing materials, fencing details, restoration work to remove access, and post construction stabilization. If temporary shoring is used to develop temporary access, the Contractor shall submit to the Engineer, as provided in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, a plan that details the methods, structures and calculations for temporary shoring that will be used to facilitate access. The plans for temporary shoring shall be included in the submittal of the temporary access plans

Within 15 working days after the approval of the contract, the Contractor shall submit 3 copies of the temporary access plans to the Engineer. The Engineer will have 10 working days to review the temporary access plans. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the temporary access plans within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the temporary access plans, 4 approved copies of the temporary access plans, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the temporary access plans while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Temporary access plans shall also contain proposals for restoring temporary access back to original grades to match surrounding terrain. Restoration proposals shall apply to any improvements made to area within the limits of existing temporary access.

MAINTENANCE

The Contractor shall maintain the temporary access throughout the contract or until removed and the area restored. The Contractor shall prevent heavy erosion, rutting or migration of surfacing or supporting soils from enroaching into ESA areas. Any significant depressions resulted from settlement or heavy equipment shall be repaired by the Contractor, as directed by the Engineer.

Temporary access shall be maintained to minimize tracking of soil and sediment onto the roadway. Temporary access shall be repaired or replaced on the same day when the damage occurs. Damage to the temporary construction entrance resulting from the Contractor's vehicles, equipment, or operations shall be repaired at the Contractor's expense.

Once the temporary access is no longer needed, all materials, including any imported embankment materials used to construct temporary access shall be removed and disposed of as provided for in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. Following removal and disposal of materials, temporary access areas shall be restored by ripping compacted areas to a depth of 0.3m, contour grading to conform with adjacent areas and then lightly compacted.

MEASUREMENT AND PAYMENT

Full compensation for developing, constructing, maintaining, and removing temporary access shall be considered included in the various contract items of work and no additional compensation will be paid to the Contractor. Contractor will also be responsible for complying with all water pollution control measures as specified elsewhere in these special provisions. Cost for these measures associated with the Contractor's temporary access shall be at the expense of the Contractor.

10-1.19 COOPERATION

Attention is directed to Section 7-1.14, "Cooperation," and Section 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these special provisions.

Cooperation shall apply to all biological monitor and representatives of the State.

The following contracts will be in progress during the duration of this contract:

Contract Number	Contract Approval Date
04-1123C4	April 13, 2005
04-1123U4	August 17, 2006 (Approximate)
04-1123G4	September 9, 2005

Attention is directed to Section 4, "Beginning of Work, Time of Completion and Liquidated Damages," of these special provisions.

Access shall be provided and maintained at all times once the left and right bridges, including concrete barrier (Type 80M), return walls, retaining walls, approach slabs, joint seal assemblies, and the turnaround structure are structurally complete for use by the Contractor on Project 04-1123U4. Contractor for 04-1123U4 shall be given first priority to coordinate their construction activities at the North Portal. If, in the opinion of the Engineer, completion of work on Project 04-1123K4 is delayed resulting from compliance with coordination for Project 04-1123U4, the State will compensate the Contractor for such delays in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Delivery and placement of excavated material from Project 1123K4 to the fill disposal site between the period from January 1, 2006 to April 15, 2006 will be coordinated with projects 04-1123C4 and 04-1123G4. Delivery and placement of excavated material to the disposal site between the period from October 1, 2006 to October 15, 2008 will be coordinated with Project 04-1123U4. Normal delivery and placement times are expected to be from 7:00 am. to 4:00 pm each working day. Exact times shall be worked out between Contractors, and the Engineer will be notified accordingly of the arrangements made between the Contractors. Any inefficiencies as a result of this coordination effort between Contractors shall be considered included in the various contract items of work and no additional compensation will be allowed threfor.

10-1.24 DUST CONTROL

Attention is directed to Section 10, "Dust Control," of the Standard Specifications and these special provisions.

The Contractor shall prepare and submit a dust control plan in accordance with permit requirements. No staging activities shall commence prior to the Engineer's written approval of the dust plan.

Within 15 working days after the approval of the contract, the Contractor shall submit 3 copies of the dust control plan to the Engineer. The Engineer will have 20 working days to review the dust control plan. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the dust control plan within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the dust control plan, 4 approved copies of the dust control plan, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the dust control plan while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Full compensation for preparing, submitting, and applying dust control plans shall be considered as included in the prices paid for various items of work and no additional compensation will be allowed therefor.

10-1.28 MAINTAINING TRAFFIC

Attention is directed to Sections 7-1.08, "Public Convenience," 7-1.09, "Public Safety," and 12, "Construction Area Traffic Control Devices," of the Standard Specifications and to the provisions in "Public Safety" of these special provisions and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7-1.09.

Lane closures shall conform to the provisions in section "Traffic Control System for Lane Closure" of these special provisions.

TRAFFIC MANAGEMENT PLAN

Within 15 working days after the approval of the contract, the Contractor shall prepare a Traffic Management Plan (TMP) as required by the Coastal Development Permit and submit 3 copies of the draft Traffic Management Plan (TMP) to the Engineer. The Engineer will have 20 working days to review the TMP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the TMP within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the TMP, 4 approved copies of the TMP, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the TMP while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

Full compensation for preparing the traffic management plan shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

DELIVERY AND HAULING OF MATERIAL

Delivery and hauling of materials utilizing Route 1, whether to or within the project limits shall only be permitted during the hours as shown on Chart No. 1."Delivering and Hauling of Material Requirements" Materials are defined as and not limited to items associated with the following contract items of work: traffic handling (temporary k-rail, temporary crash cushions), roadway excavation, clearing & grubbing, structure excavation/backfill, bridge sub/super structure, temporary access, embankment, rockslope protection, drainage systems, electrical systems, temporary water pollution control, and erosion control.

Full compensation for preparing the Traffic Management Plan shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

Chart No. 1
Delivery and Hauling of Material Requirements

Location: Northbound & Southbound Route 1 within Project limits

FROM HOUR TO HOUR	a.m. 12	1	2	3	4	5	6	7	8	9	10	11	p.m. 12	1	2	3	4	5	6	7	8	9	10	11	12
Mondays through Thursdays	X	X	X	X	X	X	X			X	X	X	X	X	X				X	X	X	X	X	X	
Fridays	X	X	X	X	X	X	X			X	X	X	X	X	X					X	X	X	X	X	
Saturdays	X	X	X	X	X	X	X	X	X													X	X	X	
Sundays	X	X	X	X	X	X	X	X	X													X	X	X	
Day before designated legal holiday	X	X	X	X	X	X	X	X	X													X	X	X	
Designated legal holiday/ Special Events																									

X	Delivery and hauling of materials allowed
	No delivery or hauling of materials allowed

REMARKS:

Personal vehicles of the Contractor's employees shall not be parked on the traveled way, along the shoulder within the project limits, at the Gray Whale Cove Public Parking Area and at the Montara State Beach Public Area including any section closed to public traffic."

Whenever vehicles or equipment are parked on the shoulder within 1.8 m of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 7.5 m intervals to a point not less than 7.5 m past the last vehicle or piece of equipment. A minimum of 9 cones or portable delineators shall be used for the taper. A C23 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted on a portable sign stand with flags. The sign shall be placed where designated by the Engineer.

Lanes shall be closed only during the hours shown on the charts included in this section "Maintaining Traffic." Except work required under Sections 7-1.08 and 7-1.09, work that interferes with public traffic shall be performed only during the hours shown for lane closures.

Minor deviations from the requirements of this section concerning hours of work which do not significantly change the cost of the work may be permitted upon the written request of the Contractor. These deviations shall not be adopted by the Contractor until the Engineer has approved the deviations in writing.

Chart No. 2
Two-Lane Conventional Highway Lane Requirements

Location: Northbound and Southbound Route 1 – From PM 39.6 to 40.1 (Devil's Slide)

FROM HOUR TO HOUR	a.m. 12	1	2	3	4	5	6	7	8	9	10	11	p.m. 12	1	2	3	4	5	6	7	8	9	10	11	12
Mondays through Thursdays	R	R	R	R	R	R	R													R	R	R	R	R	
Fridays	R	R	R	R	R	R	R															R	R	R	
Saturdays	R	R	R	R	R	R																			
Sundays																									
Day before designated legal holiday																									
Designated legal holidays																									

Legend:

R	One-way traffic control permitted: 1. Close one traffic lane and stop public traffic for periods not to exceed five minutes. 2. Provide at least one traffic lane. 3. Maximum length of one-way control shall be 970 feet (300 meters).
	No work that interferes with public traffic will be allowed.

REMARKS:

10-1.35 REMOVE TREE

The trees within the boundary marked "Approximate limits for tree removal" and within the ESA fence, as shown on the plans to be removed shall be removed in accordance with the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special provisions.

Holes resulting from the removal of existing trees shall be backfilled the same day the trees are removed. Soil from the surrounding area may be used to backfill these holes. The backfill shall be graded to conform with the adjacent existing grade.

Removed tree materials shall be disposed of outside the highway right of way in conformance to the provisions in Section 7-l.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. At the option of the Contractor, removed trees may be reduced to chips. Chipped material shall be spread within the project limits at locations designated by the Engineer.

Trees not otherwise shown on the plans, or designated in these special provisions to be removed, that are within the limits of excavation and embankment slopes and designated by the Engineer, shall be removed in accordance with the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special provisions.

The contract unit price paid for remove tree shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in remove tree, including removing and disposing of stumps and root system, backfilling holes, grading and chipping and spreading of chipped materials, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.37 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Attention is directed to “Finish Roadway” of these special provisions for final contouring and compaction of embankment slopes following placement of topsoil.

Attention is directed to “Aerially Deposited Lead” of these special provisions regarding the levels of aerially deposited lead present within the project limits.

Material generated from this project shall be placed at the dedicated fill disposal site located south of the project work site at approximately PM 38.2 SM-1 in San Mateo County as shown on the plans. Off-site disposal of this material will not be permitted. Material shall be spread and compacted to the grades as shown on the plans.

Temporary stockpiling at the dedicated fill disposal site shall be limited to no more than 1200 m3 at any one time within the limits of the work area. The Contractor shall coordinate the work to ensure that no delays are caused due to issues related to removal or stockpiling of material.

The Contractor shall bear any additional costs for placing materials at higher elevations for those indicated on the plans at the disposal site when either of the following conditions exists:

(1) The Contractor utilizes the materials from this project for the purposes of constructing temporary access or to support falsework or;

(2) The Contractor chooses to place the material at the disposal site after Contract 04-1123U4 has begun placing material at the disposal site.

Attention is directed to "Order of Work" of these special provisions regarding delineation of environmentally sensitive areas for marking ESAs and installing fencing materials prior to any clearing or grubbing and earthwork .

The Contractor shall not have the option of sloping back structure excavation. All structure excavation shall be cut vertical or near vertical. This provision also includes any material removed outside of but contiguous to the pay limits of structure excavation.

The Contractor shall submit to the Engineer working drawings and design calculations for the methods and materials used, and staging of the work to ensure structural stability of the excavated slopes. Such drawings and design calculations shall be signed by an Engineer who is registered as a Civil Engineer in the State of California. Working drawings and design calculations shall conform to the requirements in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The Contractor shall allow 15 working days for review and approval of the plan prior to beginning structural excavation work.

The top 0.6 m of structural backfill placed at footings and against retaining walls shall comply with the provisions in Section 20-2.01, "Topsoil" of the Standard Specifications.

Slope re-construction and embankment construction that is either contiguous to or conforms to the limits of structural backfill shall use soil material that complies with the provisions in Section 20-2.01, "Topsoil" of the Standard Specifications.

Within 15 working days before the slope re-reconstruction and or embankment, the Contractor shall submit 3 copies of the draft plans of the slope re-reconstruction and or embankment to the Engineer. The Engineer will have 5 working days to review the plans. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the plans within 2 working days of receipt of the Engineer's comments. The Engineer will have 2 working days to review the revisions. Upon the Engineer's approval of the plans approved copies of the plans incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the plans while minor revisions are being completed.

Excavated material will be delivered to the fill disposal site as specified in "Cooperation" of these special provisions. The maximum amount of material that shall be delivered and dumped is 500 m3 per day.

The Contractor shall be responsible for maintaining stabilized and protected stockpiles as provided for in "Dewatering and Non-storm Water Discharge Control" and "Water Pollution Control" elsewhere in these special provisions.

When placing backfill behind the Turnaround Structure retaining walls, the height of structure backfill shall not be unequally placed by more than 1.0 meter on either side of the integral beam that passes through the wall.

Full compensation for moving, placing and stabilizing imported excavated material in coordination with others shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

STRIPPING EXCAVATION

Stripping excavation shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Stripping excavation will be measured and paid for by the cubic meter as stripping excavation.

WEEP HOLE AND GEOCOMPOSIT DRAIN

If the Contractor elects to use the "Weep Hole and Geocomposite Drain" alternative where permitted on the plans, the geocomposite drain shall conform to the details shown on the plans and the following:

A. Attention is directed to "Engineering Fabrics" under "Materials" of these special provisions.

B. Geocomposite drain shall consist of a manufactured core not less than 6.35 mm thick nor more than 50 mm thick with one or both sides covered with a layer of filter fabric that will provide a drainage void. The drain shall produce a flow rate, through the drainage void, of at least 25 liters per minute per meter of width at a hydraulic gradient of 1.0 and a minimum externally applied pressure of 168 kPa.

C. A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications shall be furnished for the geocomposite drain certifying that the drain produces the required flow rate and complies with these special provisions. The Certificate of Compliance shall be accompanied by a flow capability graph for the geocomposite drain showing flow rates for externally applied pressures and hydraulic gradients. The flow capability graph shall be stamped with the verification of an independent testing laboratory.

D. Filter fabric for the geocomposite drain shall conform to the provisions for fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications.

E. The manufactured core shall be either a preformed grid of embossed plastic, a mat of random shapes of plastic fibers, a drainage net consisting of a uniform pattern of polymeric strands forming 2 sets of continuous flow channels, or a system of plastic pillars and interconnections forming a semirigid mat.

F. The core material and filter fabric shall be capable of maintaining the drainage void for the entire height of geocomposite drain. Filter fabric shall be integrally bonded to the side of the core material with the drainage void. Core material manufactured from impermeable plastic sheeting having nonconnecting corrugations shall be placed with the corrugations approximately perpendicular to the drainage collection system.

G. The geocomposite drain shall be installed with the drainage void and the filter fabric facing the embankment. The fabric facing the embankment side shall overlap a minimum of 75 mm at all joints and wrap around the exterior edges a minimum of 75 mm beyond the exterior edge. If additional fabric is needed to provide overlap at joints and wrap-around at edges, the added fabric shall overlap the fabric on the geocomposite drain at least 150 mm and be attached thereto.

H. Should the fabric on the geocomposite drain be torn or punctured, the damaged section shall be replaced completely or repaired by placing a piece of fabric that is large enough to cover the damaged area and provide a minimum 150-mm overlap.

I. Plastic pipe shall conform to the provisions for edge drain pipe and edge drain outlets in Section 68-3, "Edge Drains," of the Standard Specifications.

J. Treated permeable base to be placed around the slotted plastic pipe at the bottom of the geocomposite drain shall be cement treated permeable base conforming to the provisions for cement treated permeable base in Section 29, "Treated Permeable Bases," of the Standard Specifications and these special provisions.

K. The treated permeable base shall be enclosed with a high density polyethylene sheet or PVC geomembrane, not less than 250 µm thick, which is bonded with a suitable adhesive to the concrete and geocomposite drain. Surfaces to receive the polyethylene sheet shall be cleaned before applying the adhesive. The treated permeable base shall be compacted with a vibrating shoe type compactor.

MEASUREMENT AND PAYMENT

Measurement and payment for the various types or classifications of structure excavation and structure backfill shall conform to the provisions in Sections 19-3.07, "Measurement," and 19-3.08, "Payment," of the Standard Specifications and these special provisions.

Pervious backfill material in connection with bridge work will be measured and paid for by the cubic meter as structure backfill (bridge).

If structure excavation or structure backfill involved in bridges is not otherwise designated by type, and payment for the structure excavation or structure backfill has not otherwise been provided for in the Standard Specifications or these special provisions, the structure excavation or structure backfill will be paid for at the contract price per cubic meter for structure excavation (bridge) or structure backfill (bridge).

Structure excavation designated as (Type D), for footings at the locations shown on the plans, will be measured and paid for by the cubic meter as structure excavation (Type D). Ground water or surface water is expected to be encountered at these locations, but seal course concrete is not shown or specified. Structure excavation for footings at locations not designated on the plans as structure excavation (Type D), and where ground or surface water is encountered, will be measured and paid for by the cubic meter as structure excavation (bridge).

10-1.395 EMBANKMENT CONFINEMENT SYSTEM

Embankment Confinement System shall consist of double twisted hexagonal PVC-coated steel wire mesh, zinc-coated square-grid wire mesh, reinforcing and shaping elements, fasteners, and erosion netting. Individual components of Embankment Confinement System are as shown on the plans and as indicated in the manufacturer's literature. Where there may be discrepancies between the manufacturer's literature and these special provisions, these special provisions and the plans shall govern.

The embankment shall be constructed in vertical lifts with sections of Embankment Confinement System, lightweight fill, and soil, such that surface soil is adequately confined by the Embankment Confinement System and erosion netting, until vegetation is established. Embankment Confinement System shall be constructed as shown on the plans, as recommended by the manufacturer, in conformance with these special provisions, and as directed by the engineer.

The overall width (embankment face, station-to-station), height, and length (embedment length in cross-sectional view) of the Embankment Confinement System shall vary no more than 5 percent from the dimensions shown on the plans.

MATERIALS

Materials for the Embankment Confinement System shall conform to These special provisions. Each shipment to the project site shall be accompanied by a Certificate of Compliance conforming to the provision in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

Major components of Embankment Confinement System shall be pre-packaged at the point of manufacture. Manufactured standard embedment panel lengths of the twisted hexagonal mesh shall match the dimensions shown on the plans, as closely as possible, such that trimming excess material is minimized. The manufactured, twisted hexagonal mesh shall be provided as continuous elements. The embedment panel length dimension shall not exceed the largest available standard manufactured length of 6 meters. The hexagonal mesh may be cut along the width dimension in the field to fit the required embedment length of each lift. Embedment length shall not be achieved splicing any additional pieces of mesh. Joining of adjacent sections of Embankment Confinement System is allowed and necessary to achieve the total width dimensions (station-to-station), as shown on the contract plans.

Twisted Hexagonal Mesh and Selvage Wire. Mesh wires shall form a hexagonal pattern and shall be formed with a nonraveling twist. Nominal dimensions of the hexagonal mesh opening shall be 80 mm x 100 mm. The range for the smaller dimension shall be 75 mm to 85 mm, such that the area of the hexagonal opening does not exceed 6650 mm^2.

Individual wires of the PVC-coated, twisted hexagonal mesh and selvage wires shall conform to the definitions and requirements in ASTM Designation A641/A641 M and ASTM A975-97 (Table 1, Mesh Characteristics for PVC-coated gabion), and also the following requirements:

MESH WIRE

Characteristic	Test Designation	Requirement
Minimum tensile strength	ASTM A370	410 MPa
Wire Size	USA Steel Wire Gage	12
Wire Diameter	ASTM A641/A641 M	2.69 mm
(Minimum)	ASTM A641/A641 M	2.59 mm
Galvanizing, Zinc	ASTM A641/A641 M, Class 3 and ASTM A90 / A90M	230 g/m^2

SELVAGE WIRE

Characteristic	Test Designation	Requirement
Minimum tensile strength	ASTM A370	410 MPa
Wire Size	USA Steel Wire Gage	10
Wire Diameter	ASTM A641/A641 M	3.4 mm
(Minimum)	ASTM A641/A641 M	3.33 mm
Galvanizing, Zinc	ASTM A641/A641 M, Class 3 and ASTM A90 / A90M	260 g/m^2

Joint Wire. Standard tie wire shall conform to the definitions and requirements in ASTM Designation A641/A641 M and shall also conform to the following requirements:

TIE WIRE		
Minimum Tensile Strength	ASTM A370	410 Mpa
Tie Wire		
Wire Size (Minimum)	USA Steel Wire Gage	13.5
Wire Diameter	ASTM A641/A641 M	2.19 mm
(Minimum)	ASTM A641/A641 M	2.09 mm
Zinc Coating	ASTM A641/A641 M, Class 3 And ASTM A90/A90 M	220 g/m^2

Alternative Fasteners, Interlocking or Overlapping". Alternative fasteners shall have the configurations, wire diameters, and other dimensions as shown Caltrans Standard Plan D100B, "Alternative Gabion Joint Material Fasteners". Alternative fasteners shall conform to the definitions and requirements in ASTM Designation A313/A313 M for "Stainless Steel Spring Wire" and shall be Tensile Type 302, Class 1.

Welded Wire. There shall be no bulging or buckling of the completed front face of the Embankment Confinement System. Welded wire panels shall be installed as shown on the plans and shall be made from MW51.6 wire, according to ASTM A82, diameter 8.10 mm, tensile strength 515 MPa. The rectangular mesh openings shall be 150 mm x 162 mm, as recommended by the manufacturer. The weld shear value shall be at least 12.44 kN according to ASTM A185.Wire Brackets and Reinforcing Elements. Wire brackets for obtaining the slope angle (cross-sectional view) of the front panel face of Embankment Confinement System and other reinforcing elements shall be as recommended by the manufacturer. The manufacturer shall provide the engineer with literature that documents the dimensions and material properties of the various brackets and reinforcing elements.

Polyvinyl Chloride (PVC) Coating

External coating shall consist of a nonconductive material, primarily polyvinyl chloride (PVC). Mesh wires, standard tie wires, and selvage wires shall be coated with the PVC material, after zinc coating is applied in conformance with wire manufacturers specifications and procedures.

The PVC coating shall be sampled and evaluated by ASTM E 204 (Fourier Transformed Infrared Spectroscopy-FTIR) to obtain a spectral scan. The manufacturer of Embankment Confinement System shall submit PVC-coated wire samples from normal production. The spectral scan must closely match those of PVC products previously tested and on file at the Caltrans Transportation Laboratory, 5900 Folsom Blvd., Sacramento, CA 95819.

The minimum thickness of PVC which covers the wire shall be 0.38-mm, measured radially at any cross-section transverse to the wire length.

The PVC coating shall be complete by visual inspection. There shall be no nicks, cuts, holidays or abraded areas in the PVC coating of the mesh. Minor cuts, nicks, and other minor imperfections due to manufacturing, will be permitted along selvage-wrapped edges of twisted mesh. PVC will not be required at the ends of mesh where it has been trimmed along wire or panel edges during the normal manufacturing process.

The color of the PVC shall be gray. PVC coating shall be resistant to degradation by ultraviolet (UV) radiation. A suitable, UV-resistant additive shall be blended with the PVC. The additive shall be identified on the Certificate of Compliance.

Filter Fabric

Filter fabric for use with Embankment Confinement System shall conform to the provisions in Section 88, "Engineering Fabrics," of the Standard Specifications and these special provisions.

Backfill Material

Backfill material for Embankment Confinement System shall conform to the sections titled "Earthwork" and "Lightweight Fill," elsewhere in these special provisions.

EROSION CONTROL NETTING

Erosion control netting shall consist of 100 percent spun coir fiber and shall conform to the following:

Specification	Requirement
Weight, grams per square meter ASTM Designation: D 3776	400
Minimum Tensile Strength, kilonewtons, ASTM Designation: D 4595-86	0.23/0.14 (dry) 0.17/0.11 (wet)
Roll Width, meters, min.	2
Area/Roll, square meters, min.	200
Open Area, percent	63-70

INSTALLATION

Embankment Confinement System shall be installed as indicated in the manufacturer's literature, as specified in these special provisions, and as directed by the engineer.

The Embankment Confinement System confinement system shall be filled with backfill material consisting of both select material and light weight fill material divided by filter fabric as shown on the plans. Erosion control netting, specified elsewhere in these special provisions, shall be installed between the front panel face and welded wire panel on the inside of the confinement system prior to placing select material backfill as shown on the plans.

Adjacent sections of Embankment Confinement System shall be assembled individually and then joined before the backfill is placed.

ENGINEERING FABRICS

Engineering fabrics shall conform to the provisions in Section 88, "Engineering Fabrics," of the Standard Specifications and these special provisions.

Filter fabric for this project shall be ultraviolet (UV) ray protected.

If the Contractor elects to use the "Weep Hole and Geocomposite Drain" alternative where permitted on the plans, the geocomposite drain shall conform to the details shown on the plans and the following:

A. Attention is directed to "Engineering Fabrics" under "Materials" of these special provisions.

B. Geocomposite drain shall consist of a manufactured core not less than 6.35 mm thick nor more than 50 mm thick with one or both sides covered with a layer of filter fabric that will provide a drainage void. The drain shall produce a flow rate, through the drainage void, of at least 25 liters per minute per meter of width at a hydraulic gradient of 1.0 and a minimum externally applied pressure of 168 kPa.

C. A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications shall be furnished for the geocomposite drain certifying that the drain produces the required flow rate and complies with these special provisions. The Certificate of Compliance shall be accompanied by a flow capability graph for the geocomposite drain showing flow rates for externally applied pressures and hydraulic gradients. The flow capability graph shall be stamped with the verification of an independent testing laboratory.

D. Filter fabric for the geocomposite drain shall conform to the provisions for fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications.

E. The manufactured core shall be either a preformed grid of embossed plastic, a mat of random shapes of plastic fibers, a drainage net consisting of a uniform pattern of polymeric strands forming 2 sets of continuous flow channels, or a system of plastic pillars and interconnections forming a semirigid mat.

F. The core material and filter fabric shall be capable of maintaining the drainage void for the entire height of geocomposite drain. Filter fabric shall be integrally bonded to the side of the core material with the drainage void. Core material manufactured from impermeable plastic sheeting having nonconnecting corrugations shall be placed with the corrugations approximately perpendicular to the drainage collection system.

G. The geocomposite drain shall be installed with the drainage void and the filter fabric facing the embankment. The fabric facing the embankment side shall overlap a minimum of 75 mm at all joints and wrap around the exterior edges a minimum of 75 mm beyond the exterior edge. If additional fabric is needed to provide overlap at joints and wrap-around at edges, the added fabric shall overlap the fabric on the geocomposite drain at least 150 mm and be attached thereto.

H. Should the fabric on the geocomposite drain be torn or punctured, the damaged section shall be replaced completely or repaired by placing a piece of fabric that is large enough to cover the damaged area and provide a minimum 150-mm overlap.

I. Plastic pipe shall conform to the provisions for edge drain pipe and edge drain outlets in Section 68-3, "Edge Drains," of the Standard Specifications.

J. Treated permeable base to be placed around the slotted plastic pipe at the bottom of the geocomposite drain shall be cement treated permeable base conforming to the provisions for cement treated permeable base in Section 29, "Treated Permeable Bases," of the Standard Specifications and these special provisions.

K. The treated permeable base shall be enclosed with a high density polyethylene sheet or PVC geomembrane, not less than 250 µm thick, which is bonded with a suitable adhesive to the concrete and geocomposite drain. Surfaces to receive the polyethylene sheet shall be cleaned before applying the adhesive. The treated permeable base shall be compacted with a vibrating shoe type compactor.

GRADING, EXCAVATION AND BACKFILL

Areas where Embankment Confinement System are to be placed shall be constructed to the lines and grades shown on the plans and as directed by the Engineer.

CONSTRUCTION

Within the same lift, Embankment Confinement System shall be assembled individually as empty sections. Each section shall be manufactured with top, front, and embedment, properly spaced and secured, so that the panels can be folded into position at the construction site with no additional tying or fastening of any folded joints.

Empty Embankment Confinement System sections shall be set in place and the panels unfolded as recommended by the manufacturer. The empty adjacent sections shall be joined every 900 mm in the embedment length dimension, using either standard tie wire or alternative fasteners, either interlocking or overlapping. The 900 mm-spaced joints shall be formed similar to those shown on Caltrans Standard Plan D100B “Standard Tie Wire Detail” or “Alternative Gabion Joint Material fasteners”, except as follows. For standard tie wire, there shall be a double half hitch, and simple spiraling (looping without locking) shall not be allowed. For alternative fasteners, there shall be one alternative fastener every 900 mm, and the alternative fastener shall enclose both of the selvage wires in a single pass.

All joints on the embankment face, including the sloped-back front edges of adjacent sections of Embankment Confinement System, and the top edge to bottom edge of the next higher lift, shall be as shown on Caltrans Standard Plan D100B, “Standard Tie Wire Detail” or “Alternative Gabion Joint Material fasteners”. The nominal spacing of standard tie wire shall be 100 mm, with alternating double and single half-hitches (locked loops). At the contractor’s option, an alternative fastener (interlocking or overlapping) shall be placed in each mesh opening along the joint, such that there is a minimum of 10 alternative fasteners per meter. The NOTES on Caltrans Standard Plan D100B apply to all joints on the embankment face, except the phrase “Embankment Confinement System” replaces the word “gabion”. The alternative fastener shall contain and secure all the wires along the joint. When an alternative fastener can not enclose all the wires along the joint, then standard tie wire shall be used.

The back edge of the top panel that is folded over does not have to be joined to the bottom of the next embedment panel.

Multi-layered sections of Embankment Confinement System shall be assembled such that the front face panels are aligned in a smooth-uniform slope face as shown on the plans.

ASSEMBLY OF TRANSITIONAL EMBANKMENT CONFINEMENT SYSTEM

To match the geometry of the planned Embankment Confinement System configuration, or to meet specific conditions, panels shall be folded, cut, or retied as recommended by the manufacturer and as directed by the Engineer.

FILLING WITH BACKFILL MATERIAL

Before backfilling each confinement system with backfill material, all kinks and folds in the wire fabric shall be straightened and all successive Embankment Confinement System sections shall be properly aligned.

Erosion control netting shall be installed and secured on the inside of the top, front and embedment panels (portions) between the front panel face and welded wire panel, as shown on the plans, prior to backfilling the outer portion of the confinement system with select material. Select material shall be placed in the Embankment Confinement System and compacted to 90% relative compaction. At the contractor's option and at no cost to the State, wire mesh may be installed and secured at this interface of backfill materials to provide stiffening during backfilling operations. The filter fabric may be attached to the mesh.

The backfill material and its compaction shall be in accordance to the Structural backfill material specifications as specified in the Standard Specifications or otherwise directed by the Engineer.

If the Engineer determines that there is excessive bulging or dimpling of the embankment front face panels, the unit shall be reconstructed at the Contractor's expense.

MEASUREMENT

Embankment Confinement System will be measured by the cubic meter of volume of backfill necessary to build the Embankment Confinement System.

PAYMENT

The contract unit price paid per cubic meter for Embankment Confinement System shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Embankment Confinement System, complete in place, including Welded Wire panel, Engineering fabric (Geocomposite Drain) , filter fabric, steel reinforcing rods, support brackets, stainless steel rings, welded wire mesh, erosion control netting and all handling, placing and compaction of select material and backfill material, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.41 EROSION CONTROL (TYPE B)

Erosion control (type B) shall conform to the plans, the provisions in Section 20-2, "Materials," of the Standard Specifications and these special provisions.

Erosion control (type B) work shall consist of installing erosion control netting, wire mesh and securing the netting and wire mesh to the slope surface with slope anchors and rope restraints at locations shown on the plans.

Erosion control (type B) work shall consist of installing erosion control netting, wire mesh and securing the netting and wire mesh to the slope surface with slope anchors and rope restraints at locations shown on the plans.

Following the installation of erosion control (type B), erosion control materials shall be applied onto the netting face, measured and paid for, as specified in "Erosion Control (Type D)" of these special provisions.

MATERIALS

Materials shall conform to the provisions in Section 20-2, "Materials," of the Standard Specifications and these special provisions.

Erosion Control Netting

Erosion control netting shall consist of 100 percent spun coir fiber and shall conform to the following:

Specification	Requirement
Weight, grams per square meter ASTM Designation: D 3776	400
Minimum Tensile Strength, kilo-newtons, ASTM Designation: D 4595-86	9.0 to 11.3 kN/m in longitudinal direction (dry) 5.0 to 10.7 kN/m in cross-direction (dry) 6.0 to 9.8 kN/m in longitudinal direction (wet) 4.0 to 9.4 kN/m in cross- direction (wet)
Roll Width, meters, min.	4
Area/Roll, square meters, min.	200
Open Area, percent	63-70

Staples

Staples for erosion control netting shall be as shown on plans.

Welded Wire Mesh

Welded wire mesh materials shall conform to the provisions in Section 80-3.01 D, "Wire Mesh" of the Standard Specifications and as follows:

Welded wire mesh shall have a maximum opening of 51mm X 102mm. The top and bottom wires shall be 10-gage and the intermediate wires and vertical stays 14-gage.

Roll length shall be a nominal 1.82 X 15.23 M.

Property	Test Method	Value
Tensile Strength (Mpa)	ASTM A 370	414 Min

Tie wires used to fasten the mesh to cables or to adjacent panels shall be galvanized and no smaller than 13.5 gauge. The twisted wire mesh shall be securely fastened to the rock drapery system.

Slope Anchors

Slope anchors shall conform to the following:

Anchors shall be galvanized metal rod with a minimum diameter of 25.4 mm and an overall length of 1.0M. The top 50 mm of each rod shall be threaded.

Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting" of the Standard Specifications. California Test 541 will not be required nor will the grout be required to pass through the screen with a 1.8 mm-maximum clear opening prior to being introduced into the grout pump. Fine aggregate may be added to the grout mixture of Portland cement and water drilled in holes 152 mm in diameter or greater, but only to the extent that the cement content of the grout is not less than 502 kilograms per cubic meter of grout. Fine aggregate, if used, shall conform to the provisions in Section 90-2 "Materials" and section 90-3, "Aggregate Grading," of the Standard Specifications.

Anchor Plate

Anchor plates shall be metal and treated with a corrosion resistant coating. Anchor plates shall have bent corners and be of dimensions as shown on the plans.

Rope Restraint

Rope restraint shall be a 15.8 mm minimum diameter hemp rope that is multi-strand and braided.

Miscellaneous Material

All miscellaneous hardware such as thimbles, bolts, and nuts, shall be galvanized and conform to Section 75, "Miscellaneous Metals," of the Standard Specifications.

INSTALLATION

Erosion control (Type B) shall be installed as follows:

Slope ladders shall be employed during installation as needed to prevent sloughing of material.

Erosion control netting strips shall be placed loosely on the slope with the vertical joints perpendicular to the slope contour lines. Vertical and transverse joints of each strip shall be overlapped a minimum of 100 mm with adjacent strips and stapled. Staples shall be driven perpendicular to the slope, and shall be located and spaced as shown on the plans. Staples shall be driven such that the top of the staple is flush with the ground surface. All ends of the netting shall be buried in place as shown on the plans.

Wire mesh shall be placed over the erosion control netting with the vertical joints perpendicular to the slope contour lines and staggered between sections of the erosion control netting such that vertical joints of the mesh are not located on top of vertical netting joints.

Wire mesh shall be secured to the slope with anchor bolt assemblies as shown on the plans. Each wire mesh panel shall overlap the adjacent panel by 100 mm and shall be fastened together with tie wires 150mm apart along the overlapped edge. In order to mold each panel to lie flush with the slope face and to maintain as perpendicular as possible the alignment of each panel, some gaps between panels may be necessary. Gaps shall be filled by installing filler panels fitted to provide the specified overlap requirement. The filler panels shall be attached by either threading and lacing a tie wire along the perimeter edge or installing ties at a maximum spacing of 150mm along the perimeter.

Once the wire mesh panels are laid down, the anchor plate and rope restraints shall be installed to secure all sections of wire mesh together. Anchor plates shall be located and spaced as shown on the plans. Anchor bolt assemblies shall be located at the overlapped edge portion of adjoining panels or at a closer interval that conforms to the existing topography, as shown on the plans.

Drilled holes for metal anchor rods installed in rock shall be a minimum of 50 mm in diameter and filled with grout prior to insertion of the rod. The length of the drill hole shall be long enough to accept the full length of the metal rod. All anchors installed in drilled holes shall have at least 2 centralizers equally spaced to adequately support and center the rod in the drilled hole.

Care shall be taken to ensure that a sufficient length of the threaded portion of all slope anchors is above the plane of the slope to accept the metal anchoring plate, washers and nuts.

A rope restraint shall be installed as shown on the plans and secured at each anchor plate. A wire rope restraint shall be installed at the top perimeter by threading the restraint through the top longitudinal edge of each panel and securing the restraint to the anchor assemblies. The top of the mesh is then folded over this perimeter restraint rope, fastened and mesh panel laid down on the slope.

CERTIFICATE OF COMPLIANCE

The contractor shall provide the Engineer with a Certificate of Compliance from the manufacturer in accordance with the provisions of Section 6-1.07 "Certificate of Compliance" of the Standards.

MEASUREMENT AND PAYMENT

The quantity of erosion control (Type B) will be determined by the square meter from actual measurement of the area covered by the erosion control netting and wire mesh excluding overlapped portions.

The contract price paid per square meter for erosion control (Type B) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing and securing and anchoring erosion control netting and wire mesh complete in place as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer

10-1.455 IMPORTED TOPSOIL

Imported topsoil shall conform to the provisions in Section 20-2, "Materials," and Section 20-3, "Erosion Control," of the Standard Specifications.

10-1.635 UNDERDRAIN

150 mm perforated and non-perforated plastic pipes underdrains shall conform to the provisions in Section 68-1, "Underdrains," of the Standard Specifications.

10-1.636 PLASTIC PIPE UNDERDRAIN

200 mm perforated and non-perforated plastic pipe underdrains shall conform to the provisions in Section 68-1, "Underdrains," of the Standard Specifications for the kind of alternative pipe underdrain installed.

Water developed during underdrain installation shall be disposed of by the Contractor in such a manner that no damage will result to the project or the environment. Removal and disposal of water shall comply with the provisions in "Non-Stormwater Discharge" and "Water Pollution Control" elsewhere in these special provisions.

10-1.637 PERMEABLE MATERIAL

Permeable material shall conform with the details shown on the plans, and to the provisions in Section 68-1, "Underdrains," of the Standard Specifications, and these special provisions. Class 3 permeable material shall conform to the following grading requirements:

Grading Requirements

Sieve Sizes	Percentage Passing
37.5-mm	100
25-mm	88-100
19-mm	52-85
9.5-mm	15-38
4.75-mm	0-16
2.36-mm	0-6

Class 3 permeable material shall have a Durability Index of not less than 40.

At least 90 percent by mass of Class 3 permeable material shall be crushed particles as determined by California Test 205.

Filter fabric for use with permeable material shall conform to the provisions for filter fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications and the following:

A. The subgrade and trench to receive the filter fabric, immediately prior to placing, shall conform to the compaction and elevation tolerance specified for the material involved.

B. Filter fabric shall be handled and placed in conformance with the manufacturer's recommendations.

C. The fabric shall be aligned and placed in a wrinkle-free manner.

D. Within 72 hours after the filter fabric has been placed, the fabric shall be covered with the planned thickness of overlying material as shown on the plans.

10-1.69 MISCELLANEOUS METAL (TUBE KEY)

Miscellaneous metal (tube key) shall consist of carbon and high-strength low-alloy structural steel and all associated hardware in connection with the construction of the tube key, as shown on the plans, and shall be in conformance with the provisions for miscellaneous bridge metal in Section 75, "Miscellaneous Metal," of the Standard Specifications and these special provisions.

Structural steel for tube key shall conform to the requirements in ASTM Designation: A 709/A 709M, Grade 50.

Prior to performing any fabrication of the tube key, the Contractor shall submit 3 copies of working drawings to the Engineer for approval, in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications.

The working drawings shall show details of any permitted options proposed in the work, details for connections not dimensioned on the plans, the direction of plates where specific orientation is required, the sequence of shop and field assembly and erection, welding sequences and procedures, the location of all butt welded splices on a layout drawing of the entire tube key, the location of any temporary supports that are to be used, and the vertical alignment of the tube key at each stage of the erection.

The Contractor shall allow the Engineer 14 working days to review the tube key working drawing submittal after a complete plan has been received. No fabrication of the tube key shall be performed until the working drawing for that work is reviewed by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the tube key's working drawings, the delay will be considered a right of way delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Engineer's review of the Contractor's working drawings for the fabrication of the tube key shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformance with the requirements of the plans and specifications. The Engineer's review shall not constitute a waiver of any of the requirements of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials, and equipment may be rejected notwithstanding review of the working drawings for the fabrication of the tube key.

Attention is directed to "Welding" of these special provisions.

Welding workmanship and techniques shall be equal to the best practice in modern commercial shops. All welding shall be performed using low hydrogen electrodes. All welders and welding operators shall be qualified in conformance with the requirements of the American Welding Society Specification: AWS D1.1.

The provisions of "Welding Quality Control" of these special provisions shall not apply to miscellaneous metal (tube key).

Steel tubing shall receive nondestructive testing (NDT) in conformance with these special provisions.

Nondestructive Testing of Welds made at a Permanent Facility

Nondestructive testing of welding shall be in conformance with the following criteria:

A. Twenty-five percent of each longitudinal, circumferential, or spiral weld made at a permanent fabrication facility shall receive NDT. If repairs are required in a portion of the tested weld, the repaired portion shall receive NDT, and additional NDT shall be performed on untested portions of the weld. The additional NDT shall be made on both sides of the repair area for a length equal to 10 percent of the length of the tube's outside circumference. After this additional 20 percent of NDT is performed, and if more repairs are required, the total cumulative repair lengths from all NDT shall be determined and documented. If the cumulative weld repair length is determined to be equal to or more than 10 percent of the length of the pipe outside circumference, then the entire weld shall receive NDT.

B. Circumferential or longitudinal welds shall receive NDT by either radiographic, real time imaging systems, or ultrasonic methods that are in conformance with the requirements in AWS D1.1.

C. The acceptance and repair criteria for ultrasonic testing (UT) shall conform to the requirements in AWS D1.1, Section 6, Table 6.3 for cyclically loaded nontubular connections. The acceptance and repair criteria for radiographic or real time image testing shall conform to the requirements of AWS D1.1 for tensile stress welds.

When steel backing plates are used, the steel backing plat complete joint penetration splice welds shall be inspected by RT or UT for material of thickness equal to or greater than 8 mm, or by RT for material of thickness less than 8 mm. The acceptance criteria for splice welds in backing rings shall be AWS D1.1, Section 6 and Figure 6.5 for RT, or Table 6.3 for UT.

Concrete anchors used in the connection with the construction of miscellaneous metal (tube key) shall be considered as stud connectors and shall conform to ASTM Designation: A 108 and ASSHTO/AWS D1.5.

The void inside the tube key where shown on the plans, shall be filled with grout. Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications.

Miscellaneous metal (tube key) will be measured and paid for as Miscellaneous metal (bridge).

Full compensation for furnishing and placing grout in the void inside the tube key where shown on the plans, shall be considered as included in the contract price paid per kilogram for miscellaneous metal (bridge) and no additional compensation will be allowed therefor.

10-1.74 TUBULAR BICYCLE RAILING

Tubular bicycle railing shall conform to the details shown on the plans, provisions in Section 83-1, "Railings," of the Standard Specifications and these special provisions.

MEASUREMENT AND PAYMENT

Tubular Bicycle Railing will be measured and paid for by the meter in the same manner specified for Metal Railing (Tubular) in Section 83-1, "Railings," of the Standard Specifications.

ENGINEER'S ESTIMATE
04-1123K4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
2	BLANK					
3	BLANK					
4	070018	TIME-RELATED OVERHEAD	LS	LUMP SUM	LUMP SUM	
5	BLANK					
6	BLANK					
7	071325	TEMPORARY FENCE (TYPE ESA)	M	770		
8	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
9	074020	WATER POLLUTION CONTROL	LS	LUMP SUM	LUMP SUM	
10	035185	CONSTRUCTION SITE DEWATERING AND NON STORM WATER DISCHARGE CONTROL	LS	LUMP SUM	LUMP SUM	
11	BLANK					
12	074040	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	M2	29 000		
13	074029	TEMPORARY SILT FENCE	M	300		
14	035187	TEMPORARY PERIMETER BARRIER (TYPE WM 1.8)	M	680		
15	BLANK					
16	074032	TEMPORARY CONCRETE WASHOUT FACILITY				
17	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	3		
18	074034	TEMPORARY COVER	M2	11 300		
19	074035	TEMPORARY CHECK DAM	M	25		
20	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	1		

ENGINEER'S ESTIMATE
04-1123K4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21 (S)	074037	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	7		
22 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
23 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
24 (S)	120165	CHANNELIZER (SURFACE MOUNTED)	EA	16		
25	129000	TEMPORARY RAILING (TYPE K)	M	110		
26 (S)	129100	TEMPORARY CRASH CUSHION MODULE	EA	22		
27	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
28	160120	REMOVE TREE	EA	100		
29	190101	ROADWAY EXCAVATION	M3	14 100		
30	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
31 (F)	190162	STRIPPING EXCAVATION	M3	220		
32 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	M3	1770		
33 (F)	192020	STRUCTURE EXCAVATION (TYPE D)	M3	7050		
34 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	4660		
35 (S)	200002	ROADSIDE CLEARING	LS	LUMP SUM	LUMP SUM	
36 (S)	035189	EROSION CONTROL (NETTING)	M2	26 000		
37 (S)	035190	EROSION CONTROL (TYPE B)	M2	2620		
38 (S)	203003	STRAW (EROSION CONTROL)	TONN	3		
39 (S)	203014	FIBER (EROSION CONTROL)	KG	2400		
40 (S)	203021	FIBER ROLLS	M	2750		

ENGINEER'S ESTIMATE
04-1123K4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41 (S)	203024	COMPOST (EROSION CONTROL)	M3	14		
42 (S)	035191	MYCORRHIZAL INNOCULUM	KG	340		
43 (S)	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	7		
44 (S)	035192	PURE LIVE SEED (TYPE 1) (EROSION CONTROL)	KG	330		
45 (S)	203044	SEED (TYPE 2) (EROSION CONTROL)	KG	90		
46 (S)	203061	STABILIZING EMULSION (EROSION CONTROL)	KG	530		
47	049896	NPS 12 SUPPLY LINE (BRIDGE)	M	315		
48	390102	ASPHALT CONCRETE (TYPE A)	TONN	490		
49 (S)	490657	600 MM CAST-IN-DRILLED-HOLE CONCRETE PILING	M	478		
50 (S)	490663	1.5 M CAST-IN-DRILLED-HOLE CONCRETE PILING	M	458		
51 (S)	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
52 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	3460		
53 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	11 100		
54 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	60		
55 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	5.6		
56 (F)	049897	ARCHITECTURAL TREATMENT (ROCK TEXTURE)	M2	240		
57 (S)	519129	JOINT SEAL ASSEMBLY (MR 101 MM - 160 MM)	M	33		
58 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	2 140 000		
59 (S-F)	520120	HEADED BAR REINFORCEMENT	EA	13 300		
60	641134	450 MM PLASTIC PIPE	M	6		

ENGINEER'S ESTIMATE
04-1123K4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	035193	450 MM PLASTIC FLARED END SECTION	EA	1		
62	721009	ROCK SLOPE PROTECTION (FACING, METHOD B)	M3	8		
63	729010	ROCK SLOPE PROTECTION FABRIC	M2	20		
64 (S-F)	750001	MISCELLANEOUS IRON AND STEEL	KG	110		
65 (S-F)	750501	MISCELLANEOUS METAL (BRIDGE)	KG	32 200		
66 (S)-F	800386	CHAIN LINK FENCE (TYPE CL-1.2, VINYL-CLAD)	M	24		
67 (S)	800391	CHAIN LINK FENCE (TYPE CL-1.8)	M	300		
68 (S)	802672	4.9 M CHAIN LINK GATE (TYPE CL-1.8)	EA	3		
69 (S-F)	049898	TUBULAR BICYCLE RAILING	M	1210		
70 (F)	049899	CONCRETE BARRIER (TYPE 80 M)	M	1220		
7 (S)1	860403	HIGHWAY LIGHTING	LS	LUMP SUM	LUMP SUM	
72 (S)	869072	SEISMIC MONITORING SYSTEM	LS	LUMP SUM	LUMP SUM	
73 (S)	049900	BRIDGE LIGHTING SYSTEM AND FOUNDATIONS	LS	LUMP SUM	LUMP SUM	
74	BLANK					
75	038089	200MM NON-PERFORATED PLASTIC PIPE UNDERDRAIN	M	25		
76	128650	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2		
77	200101	IMPORTED TOPSOIL	M3	1500		
78	038090	EMBANKMENT CONFINEMENT SYSTEM	M3	3570		
79	220101	FINISHING ROADWAY	LS	LUMP SUM		
80	680931	150 MM PERFORATED PLASTIC PIPE UNDERDRAIN	M	270		

ENGINEER'S ESTIMATE
04-1123K4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81	680932	150 MM NON-PERFORATED PLASTIC PIPE UNDERDRAIN	M	45		
82	682045	CLASS 3 PERMEABLE MATERIAL	M3	75		
83	680933	200 MM PERFORATED PLASTIC PIPE UNDERDRAIN	M	190		
84	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID (A): = _____

TOTAL BID (B):

$ 10,000.00 **x** _____ **=** _____

(Cost Per Day) **(Enter Working Days Bid)**
(Not To Exceed 600 Days)

TOTAL BASIS FOR COMPARISON OF BIDS: (A + B): _____